

REMARKS

Claim 1 has been canceled and new claims 14-23 have been added.
Accordingly, claims 14-23 are currently pending.

Claim Rejections Under 35 USC § 102

Claim 1 stands rejected under 35 USC 102(b) as being anticipated by Igarashi et al. (US Patent No. 5,186,044).

Claim 1 has now been canceled.

Double Patenting Rejection

Claim 1 stands rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of US. Patent No. 7,010,972.

Claim 1 has now been canceled and new claims 14-23 have been added.

Patentability of the Claims

The present invention is directed to a thermal type flow measuring instrument comprising a sensing element for sensing an air flow, an electronic circuit electrically connected to the sensing element and a plastic frame casing component for accommodating and protecting the electronic circuit. The plastic casing component is a housing constructed from plastic as an injection molded part formed by integral molding together with a connector terminal which is extended from an inside to an outside of the plastic casing component while still penetrating through the casing component for electric connection of the electronic circuit to an external device. The

housing further includes a fixing portion molded from plastic with a metal plate inserted therein for attachment to a duct component serving as a passage to which a fluid to be measured flows. The metal plate is entirely or partially covered with the plastic and the metal plate has an opening formed adjacent the corner of the metal plate in a plastic covered portion thereof at a part of the covered portion where a temperature stress is larger than a temperature stress at other portions of the metal plate. The opening is filled with plastic to thereby join the plastic on one surface of the metal plate with the plastic on an opposite surface of the metal plate.

The new claims in the application claim Applicants' invention, as described above, with greater particularity. It is believed that these claims patentably distinguish over the prior art cited and relied upon by the Examiner.

In covering the metal plate with plastic, the molten plastic is flowed along both the upper and lower surfaces of the metal plate and where the molten plastic on the upper surface meets the molten plastic from the bottom surface, a weld line is formed. The strength of the plastic covered product at the well line is lower than that of other portions of the plastic resin on the metal plate. Therefore, it is desirable to shorten the length of the weld line of the plastic as much as possible. Applicants' invention permits shortening of the weld line.

Referring to Figs. 11A to 11E and 12 of the present application, when the opening is not formed at the corner portion of the metal plate, the plastic fluid covering an upper surface and plastic fluid covering a lower surface are joined at the vicinity of the corner portion to form a terminal and portion so that the length of the weld line 23 is long as shown in Figs. 11C and 11D.

On the other hand, referring to Figs. 18A to 18F and 19 of the present application, when the opening is formed at the corner portion of the metal plate, the plastic fluid covering the upper surface and plastic fluid covering the lower surface are joined first through the opening formed at the vicinity of the corner portion so that the length of the weld line is shorter than that of the weld line shown in Figs. 11A to 11E. See for example, weld line 23 in Fig. 18C and weld lines 28 in Figs. 18D and E.

The present invention, by using shorter weld lines, retards the generation of cracks due to a temperature difference in environment, so that the reliability of the flow measuring instrument can be improved.

The cited Igarashi '044 patent does not show all the features of the Applicants' invention as now claimed and as discussed above, including particularly the opening or slot allowing the plastic to pass through the upper surface to the lower surface of the metal plate. Igarashi therefore does not render the new claims unpatentable.


Conclusion

In view of the foregoing amendments and remarks, Applicants contend that this application is in condition for allowance. Accordingly, reconsideration and reexamination are respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger, Malur & Brundidge, P.C., Deposit Account No. 50-1417 (referencing attorney docket no. KAS-179-02).

Respectfully submitted,

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